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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/781,904	02/20/2004	Masaya Kawano	45740/03	5316

21254 7590 07/19/2005  
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EXAMINER

KEBEDE, BROOK

ART UNIT PAPER NUMBER

2823

DATE MAILED: 07/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

**Office Action Summary**

Application No.

10/781,904

Applicant(s)

KAWANO, MASAYA

Examiner

Brook Kebede

Art Unit

2823

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
 Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 20 February 2004.  
 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-14 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
 6) ☒ Claim(s) 5-8 is/are rejected.  
 7) ☒ Claim(s) 1-4 and 9-14 is/are objected to.  
 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) ☒ All b) ☐ Some \* c) ☐ None of:  
 1. ☒ Certified copies of the priority documents have been received.  
 2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
 \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
 Paper No(s)/Mail Date 2/20/04; 5/3/04.  
 4) ☐ Interview Summary (PTO-413)  
 Paper No(s)/Mail Date. \_\_\_\_\_.  
 5) ☐ Notice of Informal Patent Application (PTO-152)  
 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Priority*

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### *Information Disclosure Statement*

2. The information disclosure statement filed on May 3, 2004 fails to comply with 37 CFR 1.98(a)(3) because it does not include a concise explanation of the relevance, as it is presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information, of each patent (reference) listed that is not in the English language. It has been placed in the application file, but the information referred to therein has not been considered.

In additions, Applicant's cooperation is respectfully requested in providing of an English translation of the reference that listed in PTO-1149 of May 3, 2004.

### *Specification*

3. The abstract of the disclosure is objected to because the abstract is not written in a single paragraph. Correction is required. See MPEP § 608.01(b).

### *Claim Rejections - 35 USC § 112*

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 5-8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 5 recites the limitation “wherein combination of materials of the dielectric films and relative thickness of the dielectric films are determined based on  $\alpha_{diel}$  calculated by following inequality (2):  $(\alpha - \alpha'_{diel}) \frac{E}{1 - \nu} (T_{process\_max} - T) \leq A$  (2),” in lines 12-17. However, the recited claimed limitation is not clear for the following reason:

According claim 1 and claim 9, the maximum process temperature  $T_{process\_max}$  is determined by the same inequality equation. In order to determine the  $T_{process\_max}$  as shown in the above equation other variable must be known first since  $T_{process\_max}$  is the only variable need to be determined. However, in order to determine the combination of materials of the dielectric films and relative thickness of the dielectric films are determined based on  $\alpha_{diel}$ , both  $\alpha_{diel}$  and  $T_{process\_max}$  need to be determined simultaneously and one more equation is required in order to determine both  $\alpha_{diel}$  and  $T_{process\_max}$ . In addition,  $\alpha_{diel}$  is a function of temperature and applicants did not clearly pointed out how the thickness can be determined form above correlation. Since the claim is not clear in its meaning and scope it is indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 6-8 are also rejected as being dependent of the rejected independent base claim.

**Accordingly, claims 5-8 have not been rejected over the prior art because, in light of the 35 U.S.C. 112 rejections supra, there is a great deal of confusion and uncertainty as to the proper interpretation of the limitations of the claims; hence, it would not be proper to reject the claims on the basis of prior art. As stated in *In re Steele*, 305 F.2d 859, 134 USPQ**

Art Unit: 2823

**292 (CCPA 1962), a rejection under 35 U.S.C. 103 should not be based on considerable speculation about the meaning of terms employed in a claim or assumptions that must be made as to the scope of the claims.**

***Allowable Subject Matter***

6. Claims 1-4 and 9-14 are allowed over prior art of record.

7. The following is a statement of reasons for the indication of allowable subject matter:

The prior art of record neither anticipates nor renders obvious the claimed subject matter of the instant application as a whole either taken alone or in combination, in particular, prior art of record does not teach “wherein the maximum process temperature  $T_{process\_max}$  after forming the dielectric films is determined using following the inequality

$$\left(\alpha - \alpha'_{diel}\right) \frac{E}{1-\nu} (T_{process\_mas} - T) \leq A,” \text{ as recited in claims 1 and 9 respectively.}$$

***Conclusion***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure Zhao et al. (US/6,100,184), Chen et al. (US/6,316,351) and Li et al. (US/6,331,479) also disclose similar inventive subjective matter. However, the prior art does not teach wherein the maximum process temperature  $T_{process\_max}$  after forming the dielectric films is determined

using following the inequality  $\left(\alpha - \alpha'_{diel}\right) \frac{E}{1-\nu} (T_{process\_mas} - T) \leq A$  either taken alone or in combination.

Art Unit: 2823

*Correspondence*

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brook Kebede whose telephone number is (571) 272-1862. The examiner can normally be reached on 8-5 Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew S. Smith can be reached on (571) 272-1907. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*Brook Kebede*

Brook Kebede  
Examiner  
Art Unit 2823

BK  
July 13, 2005